ARL-SLAD DEVELOPS NBCCS ONLINE HANDBOOK

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Introduction

The U.S. Army Research Laboratory's Survivability and Lethality Analysis Directorate (ARL-SLAD) has developed a new Web site (**https://www-slad.arl.army.mil/Internal/NBCCS/home.html**) for program managers (PMs), combat developers (CBTDEVs), and materiel developers (MATDEVs) specifically pertaining to nuclear, biological, and chemical contamination survivability (NBCCS). This online electronic handbook organizes and centralizes most of the known works on NBCCS, thereby making that information readily available to better enable programs to meet survivability requirements. This article provides a brief discussion of the various features and information contained on the Web site.

Construction of the Web site was suggested at the March 2001 meeting of the Nuclear and Chemical Survivability Committee Secretariat (NCSCS) to improve the Defense acquisition community's awareness and understanding of NBCCS. Drew Farenwald, Chief of ARL-SLAD's Nuclear, Biological and Chemical (NBC) Effects Branch, volunteered the resources of ARL-SLAD to construct and publish the Web site.

The Web site design enables quick and easy access to various publications, handbooks, and technical reports pertaining to NBCCS. The Web site's layout, features, and navigation buttons are discussed below.

Policy And Regulations

Policy and guidance for NBCCS are contained in DOD Directive 5000.1, DOD Instruction 5000.2, and U.S. Army Regulation 70-75. Although these publications mandate general requirements in meeting NBC survivability, specific guidelines pertaining to NBCCS are given in the Quadrapartite Standardization Agreement 747, as adopted by the armies of the United States, the United Kingdom, Canada, and Australia. In addition, the Deputy Chief of Staff for Operations and Plans (DCSOPS) issued quantitative NBCCS criteria for U.S. Army materiel, which consists of three characteristics: hardness, compatibility, and decontaminability. The aim in producing systems with NBCCS characteristics is to ensure that there is no significant degradation (hardness) of the equipment's critical functions, and to enable its crew to complete the assigned mission (compatibility). A contaminated system and its crew can result in a permanent loss of mission, or might risk the crew's availability for combat until a decontamination procedure is performed to a safe level (decontaminability) that precludes crew casualties. Reinforcement of this policy by the DCSOPS was issued in a November 2000 memorandum requiring PMs, CBTDEVs, and MATDEVs to implement a rigorous approach to attain NBCCS.

Handbooks

To prepare an NBCCS program plan, users are encouraged to review the Web site's online handbook publications. These publications include the Materials Handbook, the NBC Survivability Handbook, and several military handbooks. Through familiarization with these handbooks, the goal is to establish the technical infrastructure of corporate understanding, commitment, and direction so that a comprehensive NBCCS program can be implemented. These handbooks contain examples of past experience involving field investigations and analyses of test results. These sources should be very useful in tailoring your programs and in helping to perform NBCCS evaluations of both fielded and developmental systems.

Presentations And Symposiums

In the early 1990s, NBCCS symposiums were sponsored by government, industry, and academia in the chemical and biological defense community and DOD components. The participants displayed a proactive approach in achieving NBCCS objectives and shared their progress in the design and testing of military components and materials. Users may be interested in the NBCCS information presented on several particular DOD programs. There are also briefings on policy, methodology, modeling and simulation, and laboratory results. This section also includes a slideshow entitled "A General Overview of NBCCS," which provides a basic understanding of NBCCS, presents examples, and explains its importance.

Technical Reports

The Web site contains technical reports of NBCCS assessments for various combat systems. The following programs or systems are included in these reports: Avenger, BLACK HAWK, Crusader, Javelin, Kiowa Warrior, Longbow Apache, Paladin, PATRIOT, Armored Gun System, Aviation Mission Planning Station, Hand-Emplaced Wide Area Munition, Multipurpose Integrated Chemical Agent Detector, and Single Channel Ground and Airborne Radio System. The Bibliographic Summary, contained in the Help section, lists these technical reports along with their abstracts and ordering information. Also, several technical reports are provided in electronic format and can be viewed online or downloaded from the Web site.

Journal And Magazine Articles

Numerous journal and magazine articles have been published discussing the goals, objectives, and importance of an NBCCS program. The Web site contains several articles that were released by the government to the general public to introduce NBCCS. These articles also explain the importance of why starting NBCCS early in the acquisition life cycle will yield cost savings and combat dividends as opposed to addressing it later. With this objective in mind, the attention to NBCCS by DOD contractors and those in academia and industry indicates that the NBC threat is serious and that with the proper technical guidance in design and manufacture of materiel,

NBCCS is achievable. Because of changes in policies and regulations, these articles take on a historical perspective. The online articles should provide users with a general philosophical understanding to implement a successful NBCCS program.

Analytical Results

The Web site also includes analytical results of laboratory studies. These results include immersion and permeation testing of polymers; absorption, desorption, and permeation tests of materials; and modeling for predicting degradation of mechanical properties of materials. The Bibliographic Summary, contained in the Help section, also lists these analysis reports along with their abstracts and ordering information. A few analysis reports are provided in electronic format and can be viewed online or downloaded from the Web site.

Help

The Help section of the Web site provides quick reference materials for locating publications, performing general inquiries, requesting test data and analyses, and reviewing NBCCS requirement statements used in operational requirements documents, test and evaluation master plans, and system specifications. A guidebook prepared by the U.S. Army Nuclear and Chemical Agency lists points of contact and testing facility locations. This information should be helpful in determining the best practices and approaches to use in preparing NBCCS program plans.

Links

Several hypertext "hotlinks" are provided that identify the primary technical expertise and programmatic support needed by PMs and those government agencies performing an NBCCS program. Links to external Web sites provide other useful information on chemical and biological defense training, doctrine, and equipment. Although the listing focuses on a few select areas, other DOD contractors and installations should also be explored. Consult these Web sites to find information about particular technical products or services. User involvement with these key resources is encouraged to meet current and future military procurement activities.

Contacts

The NCSCS is the primary focal point for NBCCS. Representatives from other government agencies participate in regular meetings. Users are encouraged to plan to attend NCSCS meetings in conjunction with the milestone decision review process. A contacts list of ARL-SLAD mission area managers is available to assist you during your review. Mission areas are established for ground, air, and missile defense; aviation; munitions; and command, control, communications, computers, and intelligence systems. Each of these areas has an NBCCS subject matter expert available to support ongoing programs.

Site Map

No Web site would be complete without a site map. This jump-point captures all content on the Web site and aids in rapid navigation. The site map enables users to find exactly what they are looking for in the least amount of time. The categories are consistent with the navigation button selections. Simply select an area of interest from the complete index.

Photo Gallery

The Photo Gallery section is organized as a collection of images taken during materials testing, field investigations, and system evaluations. The Photo Gallery provides a summary of images contained in the Materials Handbook (see the Handbooks section online). The potential damaging effects of contaminants and decontaminants on materials are notably observable in these images. During the execution of a system's program, it is hoped that the results of other tested materials will be added to this Photo Gallery. Some NBC defensive equipment is also provided. These images may aid you in selecting materials and equipment suitable for operations in an NBC environment. You are encouraged to contribute photographs and images from your programs.

Doctrinal Archives

This is a collection of several outdated, digitized Army Field Manuals (FM 3-X series). To ensure a state of readiness in NBC defense, a new set of publications is presently being written (FM 3-11.X series), which supersedes the original FM 3-X series. The new FM 3-11.X series of publications encompasses international aspects and is being closely coordinated with NATO and other allied countries. In 1996, ARL-SLAD created a computerized database of extracts taken from a portion of the FM 3-X series of publications and produced the NBC Toolbox, available both on CD-ROM and via the World Wide Web. For historical purposes, a backup collection of the NBC Toolbox (extracts from FM 3-3, 3-4, 3-5, 3-6, and 3-9) is contained in these archives.

Conclusion

ARL-SLAD has developed the NBCCS Online Handbook using the networking approach needed to achieve survivability. The secure Web site is accessible only by registered U.S. military and government domains by going to **https://www-slad.arl.army.mil/Internal/NBCCS/home.html**. Users are encouraged to apply this knowledge base to their systems. Future plans under consideration include producing the compilation as a CD-ROM product, upgrading the Web site with a search-engine capability, and using the content to develop educational training manuals and workshop exercises involving "distance learning," or as a topic in a systems engineering course. Undoubtedly, NBCCS is an important element of a system's survivability program. When judiciously applied across all DOD programs, NBCCS is a cost-effective approach to ensure that our 21st century soldiers finish their mission decisively.

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